

NOTES ON SOUTH AUSTRALIAN POLYPLACOPHORA, WITH
ADDITIONS TO THE FAUNA; TOGETHER WITH A LIST
OF AUSTRALIAN POLYPLACOPHORA, SHOWING THEIR
DISTRIBUTION IN THE AUSTRALIAN STATES.

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[Read June 13, 1918.]

In presenting this list of Australian Polyplacophora the writer is conscious of many imperfections. It was prepared originally for his personal use, as an aid to the further study of the very interesting order of mollusca dealt with. But on submitting the rough draft to his friends, Mr. W. L. May and Dr. W. G. Torr, he has been encouraged to offer it for publication at once. As far as possible the latest classification has been adopted and the list kept as concise as possible, the writer contenting himself with giving a bibliography of the various works and papers consulted.

The list presents many peculiarities of distribution, but comments thereon are beyond the limits of this paper.

While lists of the Polyplacophora recorded from several of the individual States have from time to time been presented, no complete list for the whole of Australia appears to have been compiled previously. Mr. T. Iredale's list (Proc. Mal. Soc., vol. ix., pt. iii., p. 158, Sept. 1910) is incomplete, and intended only to illustrate his very interesting paper.

I have with some misgivings included the fauna of Norfolk Island and Lord Howe Island in the New South Wales list, thereby increasing the number of species credited to that State.

The number of species and subspecies recorded from the respective States are as follows:—Western Australia, 40; South Australia, 70; Victoria, 36; Tasmania, 44; New South Wales, 41; Queensland, 30. The total for Australia is 147, a few of which are doubtful. South Australia has the honour of holding easily the first place as to number of species, and, in fact, about half the total known Australian species have now been recorded from that State. (I have in my collection a specimen of *Acanthochiton zealandicus*, Quoy. and Gaim., labelled "New South Wales," but no further data. I have not felt justified in placing it on the Australian list until further data are forthcoming.)

NOTES AND ADDITIONS TO SOUTH AUSTRALIAN FAUNA.

Lepidopleurus liratus, Ad. and Ang., 1864 (*Terenochiton*, Iredale). This shell has heretofore been labelled in our collections. "*L. inquinatus*, Reeve, 1847." Many years ago I pointed out to my friends that it did not agree with the New Zealand shell. We are indebted to Mr. Iredale for its identification with *L. liratus*, Ad. and Ang.

Lepidopleurus badius, Hed. and Hull (*Terenochiton*, Iredale). (Rec. Aust. Mus., vol. vii., No. 4, 1909.) I am glad to be able to place this interesting *Lepidopleurus* on our South Australian list. On December 28, 1917, Mr. F. L. Saunders and I visited Cape Jervis, when Mr. Saunders was successful in finding two nice specimens. (Unfortunately my bottle of *Lepidopleurus* was washed out of my pocket, so to Mr. Saunders belongs the honour of finding the first fully-identified specimen.) On March 14, 1918, I again visited Cape Jervis, and was successful in getting another. In February, 1917, I found a carinated *Lepidopleurus*, which I put aside for identification. It approaches *L. badius* very closely, but shows some differences, and will need further investigation to accurately determine the question. Mr. Saunders kindly lent me his specimen to send over to Messrs. Gatliff and Gabriel, and later to Mr. Hull, who all have stated that it is certainly a typical *L. badius*, previously only recorded from New South Wales.

Lepidopleurus columnarius, Hed. and May, 1918 (*Terenochiton*, Iredale). Messrs. Gatliff and Gabriel (Roy. Soc. Vic., vol. xxx., N.S., pt. i., p. 24) have identified Dr. Torr's *L. pelagicus* (Torr: Trans. Roy. Soc. S. Austr., vol. xxxvi., p. 165) with the latter species, and so *L. columnarius* must be added to our South Australian list.

Ischnochiton wilsoni, Sykes, 1896 (Proc. Mal. Soc., vol. ii., pt. 2, July, 1896, p. 89). In addition to the two specimens recorded by Dr. Torr in his valuable paper on South Australian *Polyplacophora* (Trans. Roy. Soc. S. Austr., vol. xxxvi., 1912) "as probably all that have been found in South Australian *Polyplacophora* (Trans. Roy. Soc. S. Austr., vol. at Aldinga Bay about seventeen years ago.

Ischnochiton atkinsoni, Iredale and May, 1916 (Proc. Mal. Soc., vol. xxii., pts. 2 and 3, Nov., 1916). This is another addition to our South Australian fauna. In January, 1917, Dr. Torr and I spent some time at Port Lincoln, and we both collected a nice series of a shell we at the time referred to a variety of *I. crispus*, Reeve. Mr. Gatliff suggested at the time that our shell might possibly be Iredale and May's *I. atkinsoni*. Recently I have been able to pay more attention to this group, and Mr. May has

kindly lent me his co-types, so I am able to say that the Port Lincoln shells are undoubtedly referable to that species, although showing some slight variations. It is easily differentiated from *I. crispus* by its small finely-striated scales.

Ischnochiton falcatus, Hull, 1912 (Proc. Roy. Soc. Vict., vol. xxv., N.S., pt. 1, Aug., 1912). I have a specimen of this shell marked Gulf St. Vincent, and have found amongst my papers the commencement of a written description in my own handwriting dated 1900, so the shell must have been collected prior to that year. The strong ribbing in the pleural area, and the coarse tothing of the posterior margin of the lateral areas, easily distinguishes it from its congeners. It is an interesting addition to the South Australian fauna.

Ischnochiton milligani, Iredale and May, 1916 (Proc. Mal. Soc., vol. xii., pts. 2 and 3, p. 109, Nov., 1916). This shell, which is a subspecies of the well-known New South Wales shell *I. proteus*, Reeve, for many years was wrongly labelled in Australian collections "*I. divergens*." We are indebted to Dr. Torr, who has collected Polyplacophora throughout the Australian States more extensively than any other worker, for the addition to the South Australian fauna of this very fine form. He obtained a single but splendid specimen at Cape Northumberland in January, 1914. The measurements are, 45 mm. \times 21 mm.

Haploplax pura, Sykes, 1896 (Proc. Mal. Soc., vol. ii., pt. 2, July, 1896). I am glad to be able to record this as a South Australian shell, having collected a single specimen at Marino on February 12, 1917. I am indebted to Messrs. Gatliff and Gabriel for its identification, they having compared it with typical specimens in their collection.

Heterozona subviridis, Iredale and May, 1916 (Proc. Mal. Soc., vol. xii., pts. 2 and 3, p. 105, Nov., 1916). I am able to include this shell in the list of Victorian shells, as in looking through with Mr. W. L. May a fine series of *Ischnochiton crispus* sent me some years ago by Mr. Gabriel from Back Beach, Phillip Island, Victoria, we were able to pick out four specimens of Messrs. Iredale and May's shell.

Rhyssoplax calliozona, Pilsbry, 1894, Torr in Trans. Roy. Soc. S. Austr., vol. xxxvi., 1912, gives measurement of largest dried specimen as 55 mm. \times 25 mm. I have one collected at Cape Jervis on December 28, 1917, measuring 65 mm. \times 35 mm., in splendid condition. It was accompanied by others of exceptional size.

Rhyssoplax bednalli, Pilsbry, 1895. In addition to the localities given by Dr. Torr (Trans. Roy. Soc. S. Austr., vol. xxxvi., p. 154, 1912), I can add that of Warrenben, in South Australia, from which I have one valve.

Loricella angasi, Ad. and Ang., 1864. I have taken at different times three large specimens alive at Marino in deep holes at lowest tide measuring 67 mm. \times 40 mm., and one at Aldinga Bay measuring 67 mm. \times 47 mm.

Onithochiton ashbyi, Bed. and Matt., 1906. Torr (Trans. Roy. Soc. S. Austr., vol. xxxvi., p. 151, 1912) refers to only one specimen having been taken. The type was collected by me at Aldinga Bay prior to 1898 and placed in Mr. Bednall's hands for description. Several years later I took a second specimen from the same spot about a quarter of a mile south of Aldinga jetty in a large sheltered pool. This is the one referred to in Torr's paper, and is still in my possession. When alive its girdle and valves were brilliant green and pink harmonizing with the calcareous growths on the rock upon which it was found. In January, 1918, Dr. Torr was successful in finding a third specimen at Corny Point, Yorke Peninsula.

Acanthochiton maughani, Torr and Ashby, 1898. In Torr's paper (Trans. Roy. Soc. S. Austr., vol. xxxvi., p. 162, 1912) only one locality is given for South Australia. I collected it at Aldinga Bay in 1897 and at Port Noarlunga and Marino in 1899. It is, as far as my experience goes, always a rare species in this State.

Acanthochiton cornutus, Torr and Ashby, 1898 (Trans. Roy. Soc. S. Austr., vol. xxii., pt. 2, p. 217, Torr and Ashby). The type locality is given as Marino at low tide. It was taken by me on the reef which at low water is quite shallow, many rocks being exposed. In Torr's paper (Trans. Roy. Soc. S. Austr., vol. xxxvi., p. 161, 1912) he says, "This is evidently a deep-water species." I think it doubtful whether the occurrences he refers to have been correctly identified. I have not myself seen a second specimen. The existence of eyes in the dorsal area, as referred to in the addendum to the original paper by Torr and Ashby, should make it easy of identification. I should be exceedingly grateful to any collector who may meet with this shell if he would kindly place a specimen or specimens at my disposal, in order that the remarkable discovery of eyes in an *Acanthochiton* may receive further elucidation.

Anisoradsia mawlei, Iredale and May, 1916 (Proc. Mal. Soc., vol. xii., pts. 2 and 3, p. 108, Nov., 1916). Subspecies *saundersi*, n. subsp. When at Port Lincoln in January, 1917, with Dr. Torr, I collected several specimens of an *Ischnochiton* evidently new to this State. On comparing it with Iredale and May's Tasmanian shell *mawlei*, for which they formed a new subgenus *Anisoradsia*, a close general resemblance was discernable, but it differs in several respects.

It is certainly deserving of subspecific rank. My material is rather limited, so that it may on further examination and comparison with a more extended series be found to deserve full specific rank. *Anterior valve*.—The radial ribbing in this valve is in straight lines, somewhat broken, giving a shallow, nodulose appearance to these ribs, whereas the sculpture of the dominant form (*mawlei*) is wavy. *Median valves*.—The broken concentric ribbing of the lateral area easily distinguishes it from typical *mawlei*. In this subspecies the sculpture is very coarse. The concentric ribs are better described as exceptionally coarse nodules, more or less running into one another; this feature is especially marked towards the posterior margin of this area. *Posterior valve*.—The sculpture of this valve behind the mucro is much coarser than is the case in the dominant form (*mawlei*). In other respects the characteristics seem to accord. I am naming it in honour of Mr. F. L. Saunders, who is an earnest South Australian collector, and to whom belongs the credit of having first noticed the "host plant" of *Stenochiton cymodocealis*, Ashby.

DISTRIBUTION OF AUSTRALIAN POLYPLACOPHORA.

Order POLYPLACOPHORA.

Suborder LEPIDOPLEURINA.

Family LEPIDOPLEURIDAE, Pilsbry.

Genus LEPIDOPLEURUS.

Subgen. TERENOCHITON, Iredale.

<i>liratus</i> , Ad. and Ang., 1864 ...	x					x
<i>matthewsianus</i> , Bednall, 1906 ...	x					x
<i>badius</i> , Hedley and Hull, 1906 ...	x				x	
<i>norfolcensis</i> , Hedley and Hull, 1912					x	
<i>catenatus</i> , Hedley and Hull, 1912					x	
<i>columnarius</i> , Hedley and May, 1908	x					x
<i>niger</i> , Torr, 1911		x				

Subgen. CHORIPLAX.

<i>grayi</i> , Ad. and Ang.					x	
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Suborder CHITONINA.

Family CALLOCHITONIDAE, Thiele.

Genus CALLOCHITON.

<i>platessa</i> , Gould, 1846	x	x	x	x	x	x
<i>rufus</i> , Ashby, 1900		x	x			
<i>mayi</i> , Torr, 1912		x				x
<i>elongatus</i> , May, 1918						x

Genus EUDOXOCHITON.

Subgen. EUDOXOPLAX, Iredale and May

<i>inornatus</i> , Ten. Woods						x
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Subgen. CHAETOPLEURA.

<i>biarmata</i> , Rochebrune, 1882			x			
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Family ISCHNOCHITONIDAE, Pilsbry.

	Q.	S.A.	W.A.	Vic.	N.S.W.	Tas.
Genus STENOCHITON.						
Subgen. STENOCHITON.						
<i>juloides</i> , Ad. and Ang., 1865		x	x			
<i>pilsbryanus</i> , Bednall, 1896		x				
<i>posidonialis</i> , Ashby, 1918		x				
<i>cymodocealis</i> , Ashby, 1918		x				
<i>pallens</i> , Ashby, 1900		x				
Subgen. ZOSTERICOLA, MS., Ashby, 1918		x				
Genus ISCHNOCHITON.						
Subgen. ISCHNOCHITON.						
<i>pilsbryi</i> , Bednall, 1896		x				
<i>torri</i> , Iredale and May, 1916		x		x		
<i>crispus</i> , Reeve, 1847	x				x	
subsp. <i>decoratus</i> , Sykes, 1896		x	x	x		x
<i>atkinsoni</i> , Iredale and May, 1916		x		x		x
<i>ptychius</i> , Pilsbry, 1894		x	x	x		
<i>tateanus</i> , Bednall, 1897		x	x	x		x
<i>falcatus</i> , Hull, 1912		x		x		x
<i>wilsoni</i> , Sykes, 1896= <i>levis</i> , Torr		x		x		
<i>proteus</i> , Reeve, 1847	x				x	
subsp. <i>milligani</i> , Iredale and May, 1916		x		x		x
<i>gabrielii</i> , Hull, 1912				x		
<i>albinus</i> , Thiele, 1911		x		x		
<i>indifferens</i> , Thiele, 1911			x			
<i>intermedius</i> , Hedley and Hull, 1912					x	
<i>bednalli</i> , Torr, 1912		x				
<i>contractus</i> , Reeve, 1847 (<i>decussatus</i>)		x	x			
<i>lineolatus</i> , Blain., 1825 (<i>contractus</i>)		x	x	x		x
<i>fruticosus</i> , Gould, 1846		x			x	
<i>virgatus</i> , Reeve, 1848		x		x		x
Subgen. HAPLOPLAX.						
<i>thomasi</i> , Bednall, 1896		x				
<i>smaragdinus</i> , Angas, 1867	x				x	
var. <i>picturatus</i> , Pilsbry	x				x	
subsp. <i>resplendens</i> , Bed. and Matt.		x	x	x		x
<i>lentiginosa</i> , Sowerby					x	
<i>pura</i> , Sykes, 1896		x		x		
<i>mayi</i> , Pilsbry, 1895						x
Doubtful ISCHNOCHITONS.						
<i>adelaidensis</i> , Reeve						
<i>variegatus</i> , Ad. and Ang., 1864						
<i>cancellatus</i> , Sowerby						
<i>carinculatus</i> , Reeve						
<i>arbutum</i> , Reeve						
<i>sculptus</i> , Sowerby						
<i>longicymba</i> , Blain., 1825						
<i>ustulatus</i> , Reeve, 1847						
Subgen. ANISORADSIA, Iredale and May.						
<i>mawlei</i> , Iredale and May, 1916						x
subsp. <i>saundersi</i> , Ashby, 1918	x					
Subgen. ISCHNORADSIA, Shuttl.						
<i>australis</i> , Sowerby, 1840			x		x	
subsp. <i>evanida</i> , Sowerby, 1840		x		x		x
Subgen. HETEROZONA, Carp., MS., Pilsbry.						
<i>cariosus</i> , Carp. and Pils., 1873		x	x	x		x
<i>sub-viridis</i> , Iredale and May, 1916				x		x

Family CALLISTOPLACINAE.

Genus CALLOCHITON, Pilsbry.	Q.	S.A.	W.A.	Vic.	N.S.W.	Tas.
<i>antiquus</i> , Reeve, 1847	x				x	
subsp. <i>maulei</i> , Iredale and May		x	x	x		x
<i>recons</i> , Thiele, 1911			x			

Family MOPALIIDAE.

Genus PLAXIPHORA, Gray.						
Subgen. PLAXIPHORA.						
<i>albida</i> , Blain., 1825		x		x	x	x
<i>paeteliana</i> , Thiele, 1911					x	
<i>hedleyi</i> , Torr, 1911			x			
<i>pustulosa</i> , Torr, 1911			x			
<i>zebra</i> , Torr, 1911			x			
Subgen. PONEROPLAX, Iredale.						
<i>costata</i> , Blain.	x	x	x	x		x
Subgen. FREMBLEYA, H. and A. Ad.						
<i>conspersa</i> , Ad. and Ang., 1864 ...		x				
<i>matthewsi</i> , Iredale, 1901 (?), var.		x				

Family CRYPTOCONCHIDAE, (Burrow, 1815) Iredale.

Genus ACANTHOCHITON, Gray, 1821.						
Subgen. ACANTHOCHITON.						
<i>sueri</i> , Blain., syn. <i>asbestoides</i> , Smith	x	x	x	x	x	x
<i>granostratus</i> , Pilsbry, 1894		x		x	x	x
<i>crocodilus</i> , Torr and Ashby, 1898		x				
<i>cornutus</i> , Torr and Ashby, 1898 ...		x				
<i>maughani</i> , Torr and Ashby, 1898		x			x	
<i>exilis</i> , Torr and Ashby, 1898 ...		x				
<i>pilsbryi</i> , Sykes, 1896				x		
<i>lachrymosa</i> , May and Torr, 1912 ...						x
<i>brevispinosa</i> , Sowerby, 1843			x			
<i>deliciosus</i> , Thiele, 1911			x			
<i>sub-viridis</i> , Torr, 1911			x			
<i>verconis</i> , Torr and Ashby, 1898 ...		x	x			
<i>retrojectus</i> , Pilsbry, 1894	x				x	
(?) subsp. <i>rufus</i> , Torr, 1912 ...		x				
<i>variabilis</i> , Ad. and Ang., 1864 ...	x	x			x	x
<i>kimberi</i> , Torr, 1912		x				x
<i>leuconotus</i> , Hed. and Hull, 1912 ...					x	
<i>approximans</i> , Hed. and Hull, 1912					x	
<i>coxi</i> , Pilsbry, 1894					x	
Subgen. NOTOPLAX, Adams.						
<i>matthewsi</i> , Bed. and Pils., 1894 ...		x		x		
<i>speciosus</i> , H. Adams, 1861		x	x	x		x
<i>wilsoni</i> , Sykes, 1896		x		x		x
<i>glyptus</i> , Sykes, 1896				x		
Subgen. MACANDRELLUS, Dall., 1878 = LOBO-						
PLAX, Pilsbry.						
<i>costatus</i> , Ad. and Ang., 1864 ...	x	x			x	x
<i>rubrostratus</i> , Torr, 1912		x				x
Doubtful ACANTHOCHITONS.						
<i>tatei</i> , Torr and Ashby, 1898,						
(?) <i>granostratus</i> , Pilsbry						
<i>bakeri</i> , Torr, 1912, impossible of						
identification						

Family CRYPTOPLACIDAE, Dall.

Genus CRYPTOPLAX.	Q.	S.A.	W.A.	Vic.	N.S.W.	Tas.
<i>burrowi</i> , Smith, 1884	x					
<i>gunni</i> , Reeve, 1847		x	x	x		
<i>striatus</i> , Lam., 1819		x		x	x	x
<i>oculatus</i> , Quoy and Gaim., 1834 ...	x					
<i>hartmeyeri</i> , Thiele, 1911			x			
<i>michaelseni</i> , Thiele, 1911			x			

Family CHITONIDAE.

Genus RHYSSOPLAX, Thiele, 1893.						
<i>jugosus</i> , Gould, 1846					x	
subsp. <i>diaphora</i> , Ire. and May, 1916		x		x		x
<i>coxi</i> , Pilsbry, 1894	x				x	
<i>torrianus</i> , Hed. and Hull, 1909 ...		x	x			x
<i>calliozona</i> , Pilsbry, 1894		x				x
<i>exoptanda</i> , Bednall, 1897		x	x	x		
<i>bednalli</i> , Pilsbry, 1895		x	x			
<i>tricostalis</i> , Pilsbry, 1894		x	x	x		x
<i>limans</i> , Sykes, 1896	x	x		x	x	
<i>corypheus</i> , Hed. and Hull, 1912 ...					x	
<i>verconis</i> , Torr and Ashby, 1898 ...		x		x		
<i>oruktus</i> , Maughan, 1900		x				x
<i>aureo-maculata</i> , Bed. and Matt. ...		x				x
<i>vauchlusensis</i> , Hed. and Hull, 1909	x				x	
<i>translucens</i> , Hed. and Hull, 1909	x				x	
<i>coccus</i> , Menke, 1844			x			
<i>howensis</i> , Hed. and Hull, 1912 ...					x	
Genus AMAUROCHITON, Thiele, 1893.						
<i>glaucus</i> , Gray, 1828						x
Genus SYPHAROCHITON, Thiele, 1893.						
<i>PELLI-SERPENTIS</i> , Q. and Gaim., 1835					x	
subsp. <i>maugenaus</i> , Ire. and May, 1916						x
<i>funereus</i> , Hed. and Hull, 1912					x	
Genus SCLEROCHITON, Cpr.						
<i>miles</i> , Pilsbry, 1892	x					
<i>curtisianus</i> , Smith, 1884	x					
Doubtful CHITONS..						
<i>exiguus</i> , Sowerby, 1843						
<i>pulcherrimus</i> , Sowerby, 1841						
Genus TONICIA, Gray.						
<i>carpenteri</i> , Ang.					x	
<i>hullianus</i> , Torr, 1911			x			
<i>picta</i> , Reeve, 1847	x					
<i>fortilirata</i> , Reeve, 1847	x					
Subgen. LUCILINA, Dall.						
<i>confossa</i> , Gould, 1846	x					
<i>delecta</i> , Thiele, 1911			x			
Genus ACANTHOPLEURA.						
<i>spinosa</i> , Bruche., 1792	x		x			
Subgen. AMPHITOMURA, Pilsbry.						
<i>gemmata</i> , Blain., 1825= <i>spiniger</i> , Sowerby			x			
<i>aculeata</i> , Linne., 1758	x					

	Q.	S.A.	W.A.	Vic.	N.S.W.	Tas.
Genus LORICA.						
<i>volvax</i> , Reeve, 1847					x	
subsp. <i>cimolia</i> , Reeve, 1847 ...		x	x	x		x
Genus LORICELLA.						
<i>angasi</i> , Ad. and Ang., 1864		x		x	x	x
Genus SCHIZOCHITON.						
<i>incisus</i> , Sowerby, 1841	x					
Genus ONITHOCHITON, Gray.						
<i>scholvienei</i> , Thiele, 1910	x		x			
<i>ashbyi</i> , Bed. and Matt., 1906 ...		x				
<i>quercinus</i> , Gould	x				x	
<i>rugulosus</i> , Angas					x	
<i>discrepans</i> , Hed. and Hull, 1912 ...					x	
Genus LIOLOPHURA.						
<i>gaimardi</i> , Blain.	x				x	
subsp. <i>queenslandica</i> , Pils., 1894	x					
<i>georgiana</i> , Quoy and Gaim., 1835...			x			

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